

REMARKS

Applicant's Statement of Substance of Interview

Applicants wish to express appreciation to Examiner Sang Nguyen for the courtesy of an interview which was granted to Applicant's representative Michael Faibisch (Reg. No. 48,427). A personal interview was conducted at the USPTO on June 29, 2006. The substance of the interview as stated by the Examiner is set forth in the Interview Summary, numbered Paper No. 20060629. In the interview claims 1 and 23 were discussed. Applicants' representative pointed out that the Adler reference fails to show or describe the claim 1 requirement of a system that simultaneously provides "said two dimensional information and said topographical information to a partially non-overlapping portions of a single sensor array", or the claim 23 requirement of "optical elements arranged to acquire topographical information about said surface during acquisition of said two dimensional information". Agreement was reached regarding claim 1, but agreement was not reached regarding claim 23.

General Remarks

Claims 1 – 9, 11 – 14 and 16 – 44 are pending in the application, of which claims 32 – 44 and withdrawn from consideration and claims 1, 2, 6, 7, 8, 9, 23, 25, 26 and 30 are currently amended. Support for the amendment of these claims is found at Fig. 1 and at paragraph [0072] of the originally-filed specification, *inter alia*. No impermissible new matter has been added.

Applicant has carefully studied the outstanding Office Action in the present application. The present response is intended to be fully responsive to all points of rejection raised by the

Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

Entry of Preliminary Amendment

Entry of the Preliminary Amendment filed on March 15, 2006 is acknowledged with appreciation.

Allowable Subject Matter

The indication of claims 8 – 9, 11 – 14, 22 and 27 – 31 as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims is acknowledged with appreciation. Applicants respectfully submit that the rewriting of claims 8 – 9, 11 – 14, 22 and 27 – 31 in independent form, in view of amendments made to claims 1 and 23, is obviated.

Claims Objections

Claim 23 is objected to due to a typographical error. Withdrawal of the objection is respectfully requested in view of the self-explanatory amendment shown above.

Prior Art Rejections

Claim 23 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Adler et al. (US 6,437,312). Claims 1 – 4, 18 – 21 and 24 – 26 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over the combination of Adler et al. (US 6,437,312) and Nishimura et al. (US 5,761,337). Claims 5 – 7 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over the combination of Adler et al. (US 6,437,312), Nishimura et al. (US 5,761,337) and Amir (US

5,127,061). Claims 16 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over the combination of Adler et al. (US 6,437,312), Nishimura et al. (US 5,761,337) and Shipley (US 6,587,600). Applicants respectfully traverse these rejections as applied to the rejected claims.

Adler et al. shows and describes a quasi-telecentric illumination system for imaging surfaces having a non-even surface topography in which light outputs from first and second light sources is directed to impinge on the surface of an article. Two dimensional, not topographical, information is acquired. Nishimura et al. shows and describes a method and apparatus for inspection of the appearance of bumps on a semiconductor chip. The image pick up device is installed with its optical axis normal to the surface, and beams are directed at an angle to the surface. Amir Shows and describes a real time three dimensional imaging technique in which first and second reflective surfaces are rapidly rapidly rotated such that an object's surface is spanned. Shipley shows and describes methods and apparatus for producing topocompositional images.

With respect to independent claim 1, attention of the Examiner is respectfully drawn to amendment of the claim which in which the term "topographical information" has been replaced by the term --height profile information--. As pointed out by the Applicant's representative in the interview held on June 29, and agreed by the Examiner, the Adler reference fails to show or describe the requirement of a system that simultaneously provides "said two dimensional information and said topographical [now read, --height profile--] information to at least partially non-overlapping portions of a single sensor array". This deficiency is not remedied by the Nishimura reference, or other references, cited by the Examiner, none of which show or describe,

alone or in combination, simultaneously providing two dimensional and height profile information to at least partially non-overlapping portions of a single sensor array.

Independent claim 23 has been amended to replace the term “topographical information” with the term --height profile information--. Support for this clarification of terminology is found in the written specification at paragraph [0072] of the Patent Application Publication. Applicants respectfully submit that nothing in the Adler et al. reference remotely shows or suggests acquiring height profile information. The system described in Adler et al. is termed “quasi-telecentric” and is employed in the inspection of surfaces that have a non-even surface topography. Although the system described in Adler et al. is used to acquire images of surfaces of non-even topography, nothing remotely suggests obtaining a height profile of that surface. In fact, as noted at col. 8, line 41, in telecentric imaging systems, “all of the points on the surface are viewed at the same perspective”. As note above, the Adler et al. system is quasi-telecentric. Telecentric imaging systems are conventionally employed in an effort to mitigate the affects of uneven surface topography in a two dimensional imaging system; there is nothing in Adler et al. to suggest anything other than such conventional usage of telecentric imaging, i.e. for two dimensional imaging.

Applicants respectfully additionally point out that each of claims 1 and 23 includes a requirement that a second plurality of illumination optical elements (that is arranged to acquire height profile information about a surface) provides illumination “from a direction generally perpendicular to the surface”. This requirement, in combination with other claim requirements

AMENDMENT UNDER 37 C.F.R. § 1.111
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of claims 1 and 23 respectively, is not shown or suggested by any other prior art known to the Applicants.

In view of the foregoing, the Examiner is respectfully requested to withdraw the rejection of claims 1 and 23, as well as of claims 2 - 9, 11 - 14 and 16 - 22, and 24 - 31, each of which is patentable at least by virtue of its direct or indirect dependency from a patentable main claim.

Conclusion and Request for Interview

In view of the foregoing, this application is believed to be in order. Reconsideration and allowance of this application are respectfully solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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CUSTOMER NUMBER

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